

Work Order ID 74796

\*74796\*

Page 1

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: M.C. J Date: 11/10/06 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3887	B								
IIN-D119-646	B								

SCRAP

100

0.00

\*100\*

DC

Document Control

Memo

Photocopy bluefile & type labels per PPP D119-646-241 CHG001

110

0.00

\*110\*

Skidtubes

Skidtubes

Memo

1- inspect Mat'L D2500-1-190 for damage

2- Remove 45.3125" from d2500-1-180, deburr ends.

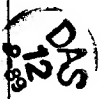



3- Ensure squareness of ends and scribe batch#

02 12/05/16

W/O: 74796		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D118-646-241 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.7.18	140	Overall length of tube is 134.125" after bending and cutting.	 12.7.18	Acceptable.	N/A	 12/06/07	 12.7.18	 12/06/07

NOTE: Date & initial all entries

# Work Order ID 74796

**\*74796\***

Page 2

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*120*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
121	QC5- Inspect Part Finish	0.00							
<b>*121*</b>									
QC	Memo	0.00							
Quality Control									
122	QC5- Inspect part completeness to step on W/O	0.00							
<b>*122*</b>									
QC	Memo	0.00							
Quality Control									

DC 12/05/16

1 0 BE 12/05/16

1 0 BE 12/05/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 74796****\*74796\***

Page 3

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

**\*130\***

Skidtubes

Skidtubes

**Memo**

0.00

1-Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill

2-Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) \*\*\*DO NOT OPEN FWD Saddles Holes\*\*\*

3- Deburr, blow out chips from inside of tube.

4 -Bond web in place as per Dwg D3887 &amp; QSI 015.

A/RSikaflex-291 12/22/Sikaflex expire date: 2013-01-04Start: 12/05/16 Time: 3:30

Finish: \_\_\_\_\_ Time: \_\_\_\_\_

\*\*\*\*\* (Adhere for 12 hours) \*\*\*\*\*

DC 12/05/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 74796****\*74796\***

Page 4

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N9000040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

135

QC5- Inspect part completeness to step on W/O

0.00


**\*135\***

QC

Memo

0.00

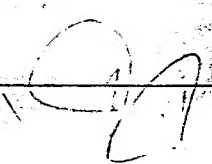
Quality Control

 12-5-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
15-2-54								

NOTE: Date & initial all entries



Work Order ID 74796

\*74796\*

Page 5

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

\*140\*

Skidtubes

Skidtubes

## Memo

0.00

1- Bend FWD end of tube using bender 1 and bend prog. D3887.\*\*\*Must use bending aid DT9544, ensure proper positioning\*\*\*

✓ 2- Cut FWD end of tube as per dwg D3887.\*\*\*Verify measurment\*\*\*

✓ 3- Buff out marks left from bending

✓ 4- Drill FWD cap holes using DT8215, Open FWD &amp; AFT cap holes to 0.208"

✓ 5- Open FWD saddle holes to finished size as per dwg D3887

✓ 6- Drill FWD x-bolt spacer holes to finished size ( holes must be laid out manually.)

✓ 7- Drill Tow ring hole, holes must be laid out manually. Open to finished size.

✓ 8- Deburr and blow out chips from inside of tube.

SAD

12-07-20

7/10/11

W/O: 74796		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D119-646241 PAR #: \_\_\_\_\_ Fault Category: skid tub NCR: Yes No DQA: 10/12 Date: 12/08/13  
 Resolution: \_\_\_\_\_ Disposition: Scrap QA: N/C Closed: 10/12 Date: 12/08/14

NCR: 12-1658		WORK ORDER NON-CONFORMANCE (NCR) 1377.90						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/08/30	#140.6	FB 200K hole found aft was drilled at about 14.21. Dwg calls for 15.21. P.C. employee miss read hole mark	12/08/31 QST 1042	Scrap tube tube according to Dwg S. Email. see Attached Email	SAD 12-08-01	12-8-1	12/08/01 QST 1042	DAS 16 9-8 12/08/30
		NO TOOLING		PA; Make Sig (tooling) DT 9816 / PAI ATTACHED	12-7-31	12/02/31		DAS 16 9-8 12/08/02
				Remove web & Re-STOCK	SAD 12-08-01	12-8-1		

NOTE: Date & initial all entries

## Eric Downing

---

**From:** David Shepherd <dshepherd@dartaero.com>  
**Sent:** Monday, July 30, 2012 3:13 PM  
**To:** 'Eric Downing'; 'Alex Pharand'  
**Cc:** 'Mike Petsche'; 'L Lacelle'; psmith@dartaero.com; 'Bill Beckett'; Isam el Kassis  
**Subject:** RE: D3887-13

Eric,

My recommendation is to scrap the tube.

Bill and Isam,

Again ... FYI ... Obviously our tooling is not world class here.

David

---

**From:** Eric Downing [<mailto:edowning@dartaero.com>]  
**Sent:** July-30-12 11:46 AM  
**To:** David Shepherd; Alex Pharand  
**Cc:** 'Mike Petsche'; 'L Lacelle'; psmith@dartaero.com  
**Subject:** D3887-13

Hello David

Sorry to bug you again but I have another problem for you to approve. I have here a D3887 (D119-646-241) skid tube with a hole drilled in the wrong location. It is the 20<sup>th</sup> hole from aft. The hole was drilled approx. 1.0" out. The measurement on the drawing calls 15.21" and the hole is at 14.21". tube is bent and has the web bonded in but has nothing welded in.

Could we be able to weld in a plug, grind the welds flush and relocate the holes to the correct dimension on the drawing. Is this acceptable rework?

The root cause is the fabricator misread his tape measure due to the fact that these holes are laid out by hand with NO help from tooling.

Thanks

Eric Downing  
QC Corrdinator  
Dart Aerospace LTD

**Work Order ID 74796****\*74796\***

Page 6

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

**\*150\***

QC	Memo	0.00							
----	------	------	--	--	--	--	--	--	--

Quality Control

160		0.00							
-----	--	------	--	--	--	--	--	--	--

**\*160\***

Skidtubes	Memo	0.00							
-----------	------	------	--	--	--	--	--	--	--

Skidtubes

1- Countersink crossbolt spacer holes, and prepare tube for welding, deburr.

2-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/RAluminum Rod \_\_\_\_\_

3-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole.

4-Counterbore x-bolt spacer holes as per Dwg D3887.

5- Deburr and blow out chips from inside of tube

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**\*74796\***

Page 7

**\*N900040100\***

Setup Start \*NS1\*

Stop \*NS2\*

Stop \*NS2\*

**Start Date:** 10/06/11      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 10/17/11      **Req'd Qty:** 1.00      **\* 1 \***

**Customer:**

**Reference:**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

170	QC5- Inspect part completeness to step on W/O	0.00
-----	---	------

**\*170\***

QC	Memo	0.00
----	------	------

### Quality Control

180	QC10- Inspect visual per QSI004- ground welds	0.00
-----	---	------

**\*180\***

QC	Memo	0.00
----	------	------

### Quality Control

190	Pressure Wash per QSI005 4.3	0.00
-----	------------------------------	------

\*190\*

HandFinish	Memo	0.00
------------	------	------

## Hand Finishing

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 74796****\*74796\***

Page 8

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
-----	--	------	--	--	--	--	--	--	--

**\*200\***

Powdercoat

Memo

Powder Coating

START TIME: \_\_\_\_\_  
OVEN TEMPERATURE: \_\_\_\_\_  
FINISH TIME: \_\_\_\_\_

210	QC3- Inspect Part Finish	0.00							
-----	--------------------------	------	--	--	--	--	--	--	--

**\*210\***

QC

Memo

Quality Control

240		0.00							
-----	--	------	--	--	--	--	--	--	--

**\*240\***

HandFinish

Memo

Hand Finishing

1-Install wearplates as per Dwg D3887.

2 -Inspect for foreign objects as per QSI 024

3 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R Sikaflex-240/-291 \_\_\_\_\_

Sikaflex expire date: \_\_\_\_\_



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Page 9

## Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 74796****\*74796\***

Page 10

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: _____	0.00							
<b>*260*</b>									
Packaging	Memo	0.00							
Packaging									
270	QC21- Final Inspection - Work Order Release	0.00							
<b>*270*</b>									
QC	Memo	0.00							
Quality Control									

R12-08-2  
Ø

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

October 6, 2011 1:40:10 PM

Page 1

Work Order ID: 74796

**\*74796\***

Parent Item: D119-646-241

**\*D119-646-241\***

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11

Required Date: 10/17/11

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-190 <b>*D2500-1-190*</b> Ext'n -1" Beam Tube 4"		Manufactured	No			110	Each	27.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		27							
					66296	27							
D3885-1 <b>*D3885-1*</b> Standard Web		Manufactured	No			140	Each	12.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		12							
					52421	12							
D3903-1 <b>*D3903-1*</b> Spacer		Manufactured	No			160	Each	15.0000	12	12			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		15							
					47476	7							
					51849	8							
D3681-1 <b>*D3681-1*</b> Spacer		Manufactured	No			160	Each	39.0000	8	8			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		39							
					68958	2							
					69893	2							
					71845	35							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 2

October 6, 2011 1:40:10 PM

Work Order ID: 74796

**\*74796\***

Parent Item: D119-646-241

**\*D119-646-241\***

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11

Required Date: 10/17/11

Start Qty: 1.00

Required Qty: 1.00

D2855-3	Manufactured	No	240	Each	7.0000	2	2
---------	--------------	----	-----	------	--------	---	---

**\*D2855-3\***

**\*\***

Cap

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP005	7	
52281	7	

AN3C5A	Purchased	No	240	Each	1,520.000	4	4
--------	-----------	----	-----	------	-----------	---	---

**\*AN3C5A\***

**\*\***

Bolt

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP-A	7	
115835	7	
ST350	1513	
116419	28	
117343	314	
117764	169	
117872	2	
118451	500	
119127	500	

D3904-1	Manufactured	No	240	Each	236.0000	16	16
---------	--------------	----	-----	------	----------	----	----

**\*D3904-1\***

**\*\***

Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST090	236	
51875	236	

D3672-1	Manufactured	No	240	Each	360.0000	4	4
---------	--------------	----	-----	------	----------	---	---

**\*D3672-1\***

**\*\***

Phenolic Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST074	360	
72229	360	

October 6, 2011 1:40:10 PM

Shop Packet Print

Page 2



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Picklist Print**

October 6, 2011 1:40:10 PM

Page 3

Work Order ID: 74796

**\*74796\***

Parent Item: D119-646-241

**\*D119-646-241\***

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11

Required Date: 10/17/11

Start Qty: 1.00

Required Qty: 1.00

\* D3849-041 Manufactured No

240

Each

3.0000

1

1

**\*D3849-041\*****\*\***

FWD WEARPLATE ASSY, STD/FLOOR GEAR

LocationLoc QtyLoc Code

FP009

3

53030

3

D3849-043 Manufactured No

240

Each

3.0000

1

1

**\*D3849-043\*****\*\***

AFT WEARPLATE ASSY, STD GEAR

LocationLoc QtyLoc Code

FP009

3

52402

3

AN3C46A Purchased No

240

Each

67.0000

8

8

**\*AN3C46A\*****\*\***

BOLT

LocationLoc QtyLoc Code

ST355

67

118757

17

118758

50

MS21043-3 Purchased No

240

Each

951.0000

8

8

**\*MS21043-3\*****\*\***

Nut

LocationLoc QtyLoc Code

FG

72

103691

72

ST301

879

118077

1

118614

492

118686

386

October 6, 2011 1:40:10 PM

Shop Packet Print

Page 3

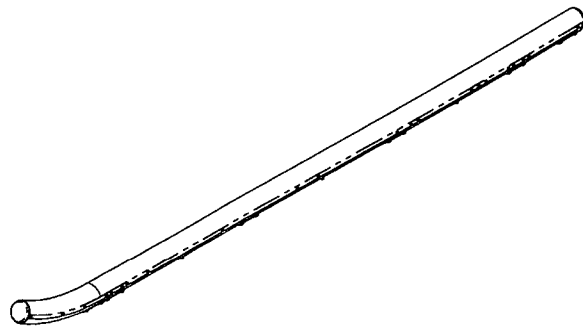
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 74796

MLS  
11-10-6

**D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)**  
**D3887-043 STANDARD SKIDTUBE ASSY WITH WEAPLATE (SIMILAR)**  
**D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB  
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs  
D3887-043 = 37.0 lbs  
D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES  
ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT  
PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT  
PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE  
WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS.  
INSTALL AELS-1032-130 INTO D3887-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS  
WITH SIKAFLEX-241/291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	5			D3846-1	GASKET
16	1			D3846-11	GASKET
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEAPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS4-1032-130	INSERT
42	34	34	4	AN3C5A	BOLT
43			8	AN3C46A	BOLT
44	34	34		NAS1149C0332R	WASHER (OR AN960C10L)
45			8	MS21043-3	NUT

RELEASED  
09/07/05

B	ALS4-1032-130 WAS AELS-1032-130, ZN C4-1, C5-7, C3-7; ADD DT8931 ZN A6-1; ADD 134-04, ZN C4-8; D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3C5A WAS AN3C4A (ZN C6-2, C2-2, C6-3, C2-3, C6-4, C2-4)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO	REV. B
MFG APPR.	RF	D3887	SHEET 1 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 STD SKIDTUBE ASSY	NTS
DATE	09.06.30	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

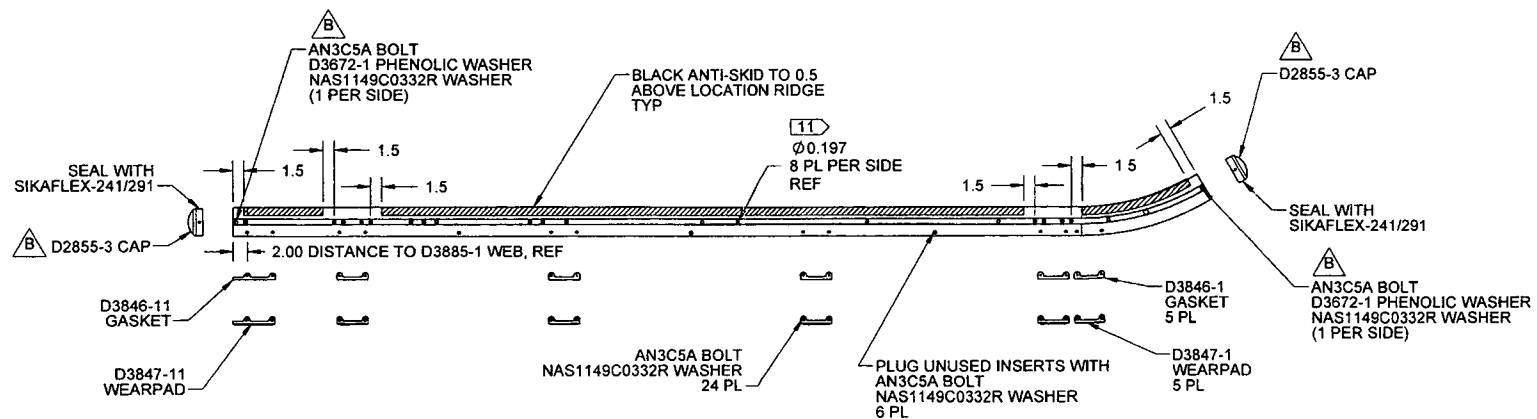
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



**D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD**  
(MAKE FROM D3887-11)

RELEASED  
2/27/15

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3887	SHEET 2 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 STD SKIDTUBE ASSY	NTS
DATE	09.06.30	<small>COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

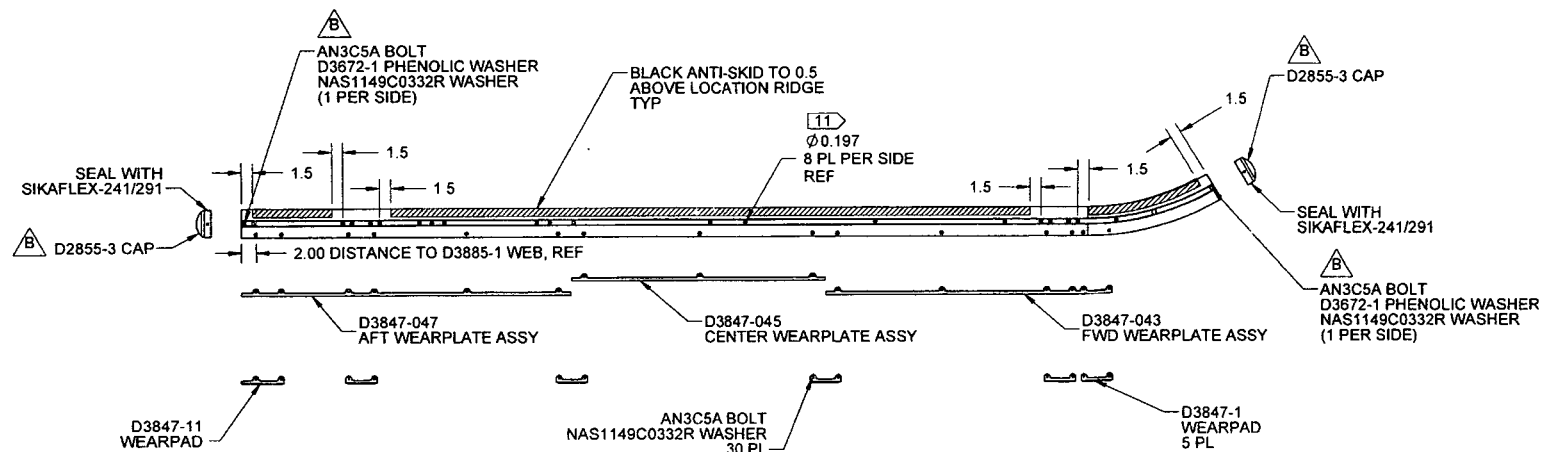
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



**D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE**  
(MAKE FROM D3887-11)

RELEASED  
09/07/15 MP

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	MP	DRAWING NO.	REV. B
MFG. APPR.	MP	D3887	SHEET 3 OF 8
APPROVED	MP	TITLE	SCALE
DE APPR.	MP	A119 STD SKIDTUBE ASSY	NTS
DATE	09.06.30	<small>COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

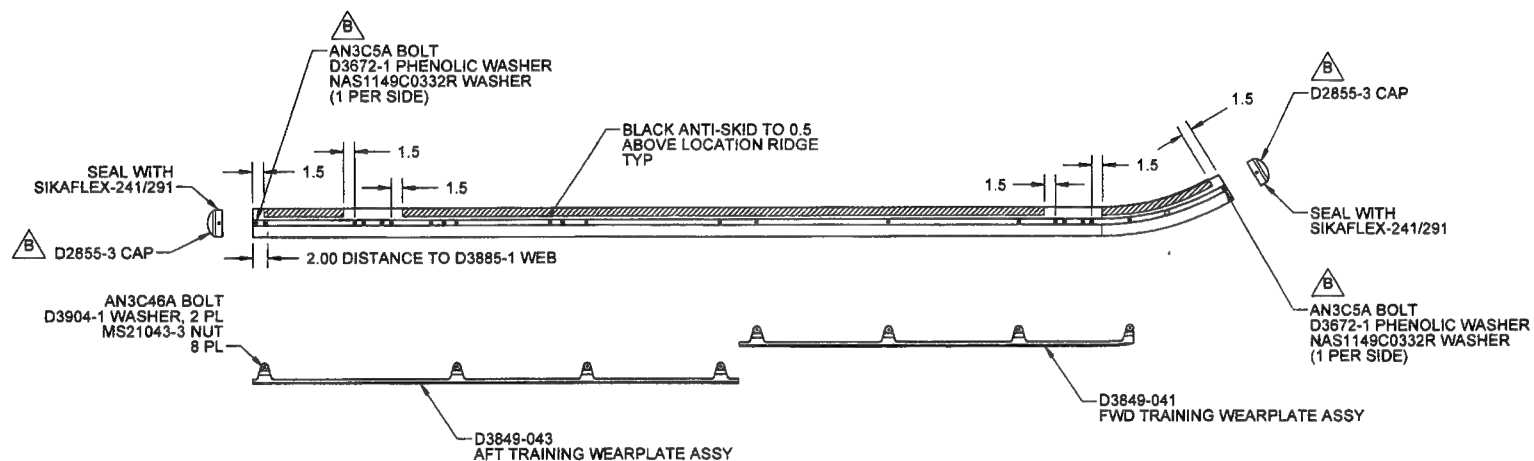
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



**D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE**  
(MAKE FROM D3387-13)

RELEASED  
21/07/15

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3887	SHEET 4 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 STD SKIDTUBE ASSY	NTS
DATE	09.06.30	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

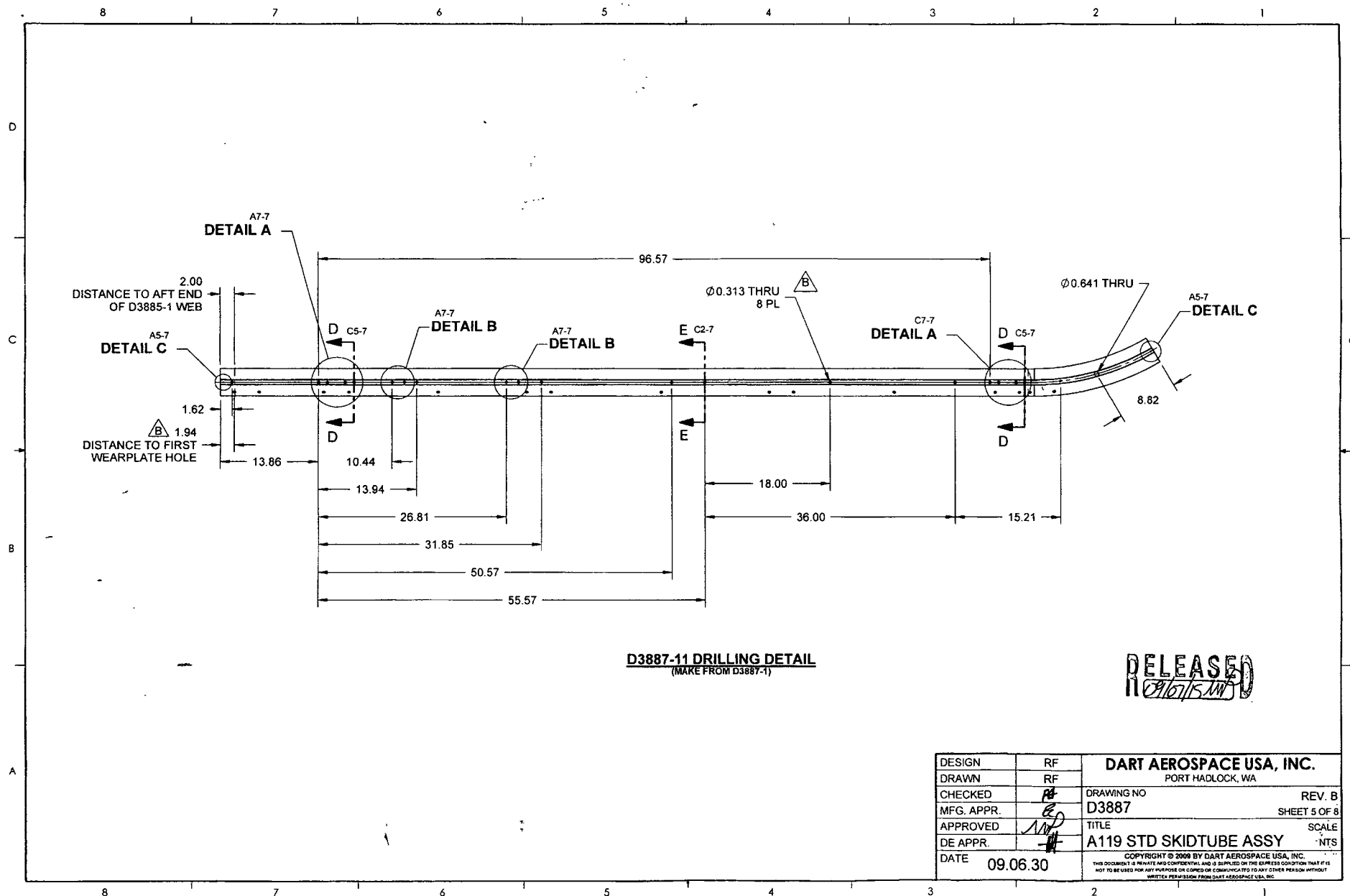
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

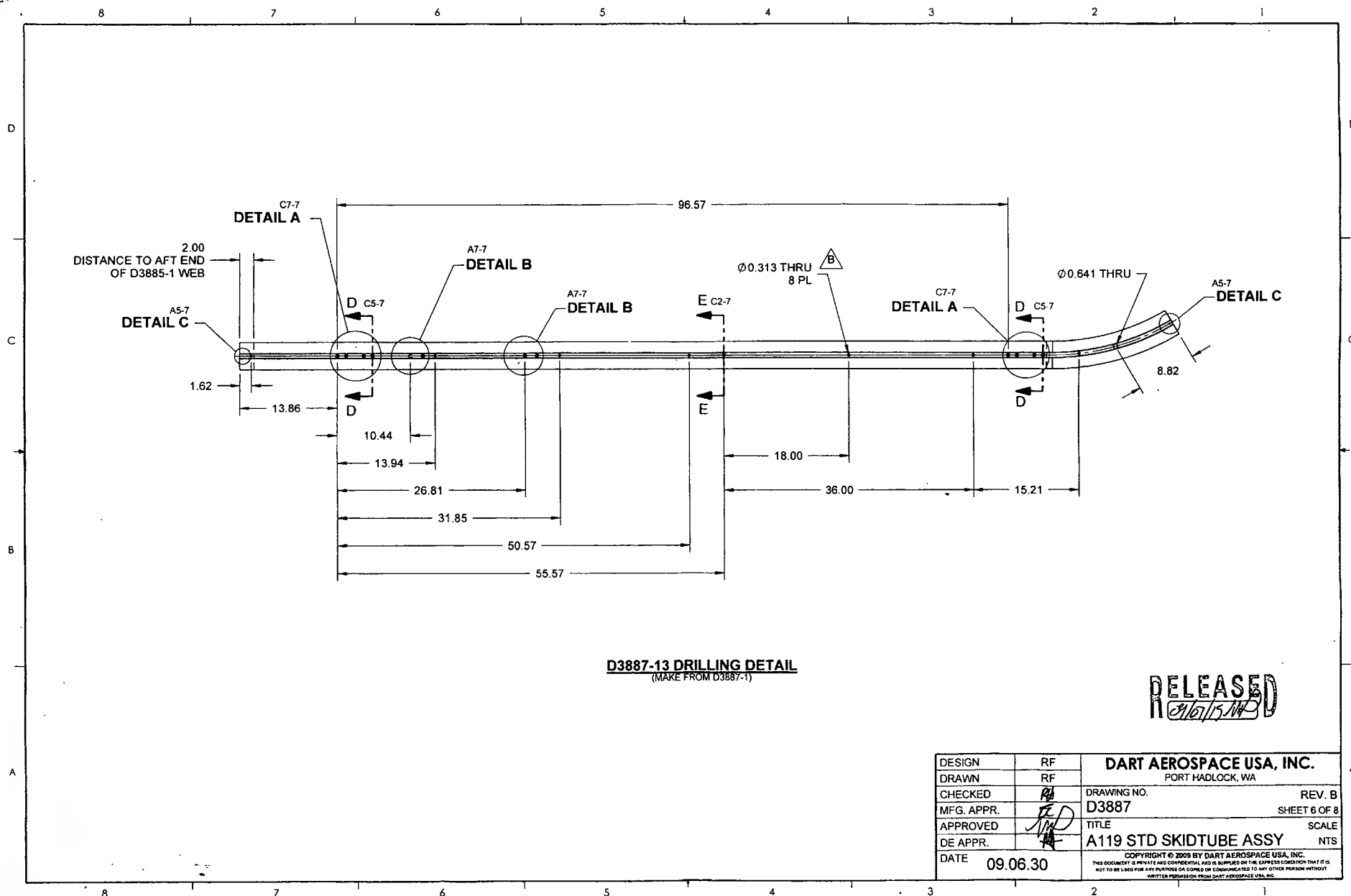
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



**D3887-13 DRILLING DETAIL**  
(MAKE FROM D3887-1)

RELEASED  
21/6/15

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO. D3887	REV. B
MFG. APPR.	RF	TITLE	SHEET 6 OF 8
APPROVED	RF	A119 STD SKIDTUBE ASSY	SCALE
DE APPR.	RF		NTS
DATE	09.06.30	<small>COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

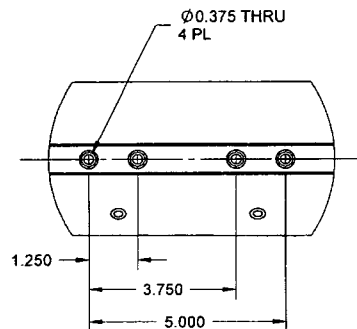
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

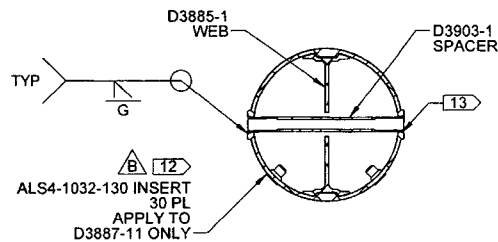
**NOTE:** Date & initial all entries

74796



**DETAIL A**  
SCALE 4X

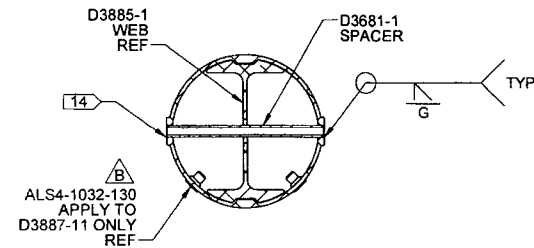
D7-5  
C3-5  
D7-6  
C3-6



**SECTION D-D**  
SCALE 4X

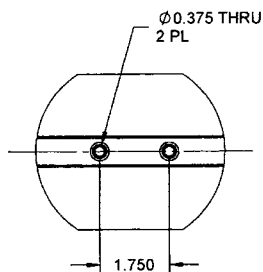
(FOR 12 X Ø0.375 HOLES  
PER SKIDTUBE)

C7-5  
C3-5  
C7-6  
C2-6



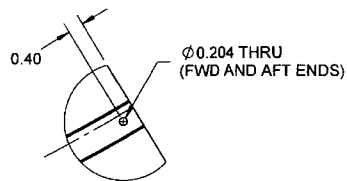
**SECTION E-E**  
SCALE 4X  
(FOR 8 X Ø0.313 HOLES  
PER SKIDTUBE)

C4-5  
C4-6



**DETAIL B**  
SCALE 4X

C6-5  
C5-5  
C6-6  
C5-6



**DETAIL C**  
TYPICAL  
SCALE 4X

C8-5  
C1-5  
C3-6  
C1-6

**NOTES:**

13) AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:

- i) CHAMFER HOLES Ø0.475 x 45°
- ii) INSERT D3903-1 SPACER
- iii) WELD INTO PLACE AND GRIND FLUSH
- iv) C BORE TO 0.313 x 0.75 DEEP
- v) DEBURR HOLES



14) AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:

- vi) CHAMFER HOLES Ø0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
- vii) INSERT D3681-1 SPACER
- viii) WELD INTO PLACE AND GRIND FLUSH
- ix) DEBURR HOLES

**RELEASED**  
09/07/2009

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO <b>D3887</b>	REV. B
MFG. APPR.	<i>[Signature]</i>	SHEET 7 OF 8	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>A119 STD SKIDTUBE ASSY</b>	
DATE	09.06.30	NTS	

COPYRIGHT © 2009 BY DART AEROSPACE USA, INC.  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS  
NOT TO BE USED FOR ANY PURPOSE OR COMED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT  
WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.



W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

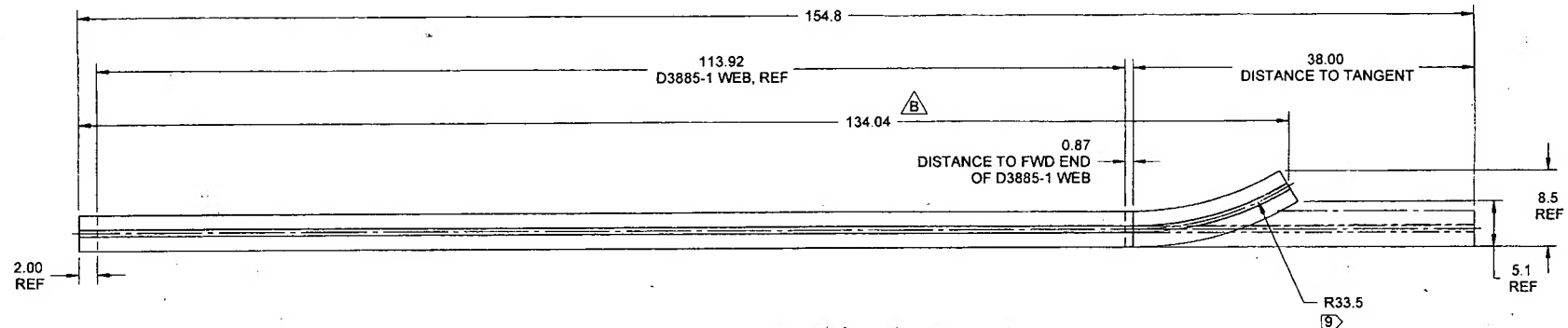
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

74796



**D3887-1 BEND DETAIL**  
(MAKE FROM D2500-1-190 EXTRUSION)

**RELEASED**  
11/15/2000

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3887	SHEET 8 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 STD SKIDTUBE ASSY	NTS
DATE	09.06.30	<small>COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

